

CLAIMS

What is claimed is:

1. An optical recording medium to which user data is written and rewritten, comprising:
 basic recording units in which the user data are seamlessly connected; and
 a predetermined area in which information, which is related to a defective area occurring before the user data is recorded, on the optical recording medium or while the optical recording medium is being used, is recorded;
 wherein a defective area data pattern is recorded in the defective area during the recording of the user data for seamless recording

2. The optical recording medium of claim 1, further comprising a data identifier (DID) area or data recordable area in which a recording pattern defined by a predetermined rule is recorded to detect a defective area before the user data is recorded on the optical recording medium, and while the user data is being recorded, a physical sector number is recorded in the data identifier area.

3. The optical recording medium of claim 2, wherein the data identifier area stores information for discriminating the user data from the defective area data pattern recorded in a corresponding sector of the optical recording medium.

4. The optical recording medium of claim 1, further comprising a data identifier (DID) area or data recordable area to detect a defective area before the user data area is recorded on the optical recording medium, and while the user data is being recorded, a logical sector number which is not assigned to the defective area is recorded in the data identifier area.

5. The optical recording medium of claim 4, wherein the data identifier area stores information for discriminating the user data from the defective area data pattern recorded in a corresponding sector of the optical recording medium.

1 6. The optical recording medium of claim 1, wherein the defective area data
2 pattern is dummy data.

1 7. The optical recording medium of claim 1, wherein the defective area data
2 pattern is the same as data in the part of an area preceding or succeeding the defective area.

1 8. The optical recording medium of claim 1, wherein the defective area data
2 pattern is defined by a drive manufacturing company.

1 9. The optical recording medium of claim 1, wherein the recording medium is a
2 digital versatile disc recordable (DVD-R) or a digital versatile disc rewritable (DVD-RW), and
3 information related to the defective area is stored in a recording management data area.

1 10. The optical recording medium of claim 1, wherein optical power is maintained
2 at write power in the defective area during recording of user data.

1 11. A method of processing a defective area in an optical recording medium to
2 which user data is written and rewritten and in which basic recording units are seamlessly
3 connected, the method comprising:

4 (a) recording a defective area data pattern in the defective area on the optical recording
5 medium to enable seamless recording of the user data during recording of the user data.

1 12. The method of claim 11, wherein the step (a) comprises maintaining a write
2 power to record the defective area data pattern in the defective area from recording the user
3 data immediately prior to and subsequent to recording the defective area data pattern.

1 13. The method of claim 11, wherein the defective area data pattern is dummy data.

1 14. The method of claim 11, wherein the defective area data pattern is the same as
2 data in a basic recording unit preceding or succeeding the defective area.

1 15. The method of claim 11, wherein the defective area data pattern is defined by a
2 drive manufacturing company.

1 16. The method of claim 11, further comprising:
2 (b) detecting the defective area occurring before the user data is recorded on the optical
3 recording medium or while the optical recording medium is being used; and
4 (c) recording information related to the detected defective area in a predetermined area
5 on the optical recording medium.

1 17. The method of claim 16, wherein the step (b) comprises detecting the defective
2 area before the user data is recorded on the optical recording medium, by certification,
3 wherein the certification is performed by recording a recording pattern defined by a
4 predetermined rule in a data identifier (DID) area or data recordable area of the optical
5 recording medium.

1 18. The method of claim 17, wherein the step (a) comprises recording a physical
2 sector number in the data identifier area during the recording of the user data.

1 19. The method of claim 18, further comprising storing information for
2 discriminating the user data from the defective area data pattern recorded in a corresponding
3 sector in the data identifier area.

1 20. The method of claim 17, wherein the step (a) comprises recording a logical
2 sector number which is not assigned to the defective area in the data identifier area.

1 21. The method of claim 20, further comprising storing information for
2 discriminating the user data from the defective area data pattern in a corresponding sector in
3 the data identifier area.

1 22. The method of claim 16, wherein the recording medium is a digital versatile
2 disc recordable (DVD-R) or a digital versatile disc rewritable (DVD-RW), and the step (c)
3 comprises storing the information related to the defective area in a recording management data
4 area of the optical recording medium.

1 23. A method of processing a defective area in an optical recording medium to
2 which user data is written and rewritten and in which basic recording units are seamlessly
3 connected, the optical recording medium having a wobble track, the method comprising:

4 (a) during the recording of the user data, lowering a write power of a light source to a
5 power not influencing the recording in a defective area of the optical recording medium and
6 recording the user data in a recordable area of the optical recording medium other than the
7 defective area with the write power, and detecting a recording restart position of a user data
8 area immediately after the defective area is detected using a wobble signal obtained from the
9 wobbled track.

1 24. The method of claim 23, wherein the step (a) comprises detecting the recording
2 restart position using a reference signal related to time.

1 25. The method of claim 23, further comprising:

2 (b) detecting the defective area occurring before the user data is recorded in the optical
3 recording medium or while the optical recording medium is being used; and

4 (c) recording information related to the defective area in a predetermined area on the
5 optical recording medium.

1 26. An optical recording medium to which user data is written and rewritten,
2 comprising:
3 basic recording units in which the user data are seamlessly connected, and including a
4 defective area; and
5 a defective area data pattern recorded in the defective area without using a linking
6 scheme.

1 27. The optical recording medium of claim 26, further comprising:
2 a predetermined area which stores information related to the defective area occurring
3 before the user data is recorded or while the optical recording medium is being used.

1 28. The optical recording medium of claim 27, wherein the predetermined area
2 comprises a recording management field which includes
3 a linking loss area;
4 general information of the optical recording medium;
5 optimum power control related information;
6 information for user specific data;
7 border zone information;
8 recording zone information containing recording items;
9 reserved areas; and
10 information related to defect management and certification, including certification
11 before the optical recording medium is used and management of defects occurring while the
12 optical recording medium is being used.

1 29. The optical recording medium of claim 27, wherein the defective area data
2 pattern is dummy data.

1 30. The optical recording medium of claim 27, wherein the defective area data
2 pattern is the same as data in the basic recording units in an area immediately preceding or
3 succeeding the defective area.

1 31. The optical recording medium of claim 27, wherein the defective area data
2 pattern is a pattern defined by a manufacturer.

1 32. A method of handling a defective area in an optical recording medium to which
2 user data is written and rewritten, comprising:

3 recording basic recording units in which the user data are seamlessly connected, on a
4 region of the optical recording medium having a defective area; and

5 recording a defective area data pattern in the defective area without using a linking
6 scheme.

1 33. The method of claim 32, wherein the recording of the basic recording units and
2 the defective area comprise:

3 recording the user data in the basic recording units up to the defective area using a
4 write power;

5 maintaining the write power while recording the defective area data pattern in the
6 defective area; and

7 maintaining the write power while recording the user data in the basic recording units
8 following the defective area.

1 34. The method of claim 33, further comprising:

2 recording information related to the defective area occurring before the user data is
3 recorded or while the optical recording medium is being used in a predetermined area of the
4 optical recording medium distinct from the region storing the basic recording units.

1 35. A method of handling a defective area in an optical recording medium to which
2 user data is written and rewritten, comprising:

3 recording the user data in basic recording units in which the user data are seamlessly
4 connected, on a region of the optical recording medium having a defective area, up to the
5 defective area using a first write power;

6 lowering the first write power to a second power less than a read power of the user data
7 while in the defective area;

8 determining a wobble signal from a wobbled track of the optical recording medium; and

9 determining a recording restart position for the user data immediately after the defective
10 area using the wobble signal.